

25X1

TO: Distribution

DATE September 10, 1965

25X1FROM:

SUBJECT: Customer Visit, Viewer Prototype

The meeting with the customer will be held Room 413-2-B, on September 15, beginning at 9:00 A.M.

25X1

Status of the program will be discussed. At that time, we shall settle outstanding questions regarding the console, so that we may proceed to Drafting detailing later in the week. The wooden mock-up of the console will be available for study in the meeting room.

Attention will be given to the following areas:

1. Console dimensions and general layout. The question of the requirement for a rotating table will be raised with the customer, in addition to the question of general suitability.
2. Kinescope facing. The plastic recently cast as a sample on a curved glass is apparently satisfactory.
3. Circuitry. Status is satisfactory.
4. Microscope modification. As I understand this question, it was raised by the customer with reference to modification of Stereo-Zoom equipment, so as to provide a binocular zoom without stereo. We now propose to use a non-stereo binocular Dynazoom microscope. The question will be clarified. We will also re-establish the range of desired magnification.

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SEP 13 1965

25X1

5. EGG light-pickup scheme. Our positions will be that a change is not timely, particularly since there are problems in this method with which we have had no experience. On the other hand, we shall suggest that if this scheme is truly desirable, the console can be easily modified at a later date to accept it.

6. Review of schedules. We should be prepared with our best estimate of the revised schedule. It is understood that a firmer estimate of schedule will be made after we have considered the decisions which should be made at this meeting.

I will be away on September 13, and possibly also on the following day. In my absence, please address any questions regarding this meeting to

distributions:

FILE

998215

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TELEPHONE OR VERBAL CONVERSATION RECORD (AR 340-15)				DATE	
LAST NAME - FIRST NAME - MIDDLE INITIAL OR, SUBJECT OF CONVERSATION				GRADE	
[REDACTED]				GSS-10	
HOME ADDRESS OR ORGANIZATION AND STATION					
PERSON CALLING		OFFICE OR RELATIONSHIP		TELEPHONE NUMBER	
[REDACTED]		[REDACTED]		[REDACTED]	
Progress on Modulated Light Viewer.					
INFORMATION GIVEN OR ACTION TAKEN					
[REDACTED] called to relate the progress to date since he will be away for the next few weeks. [REDACTED] will be in charge of the project in his absence.					
1. [REDACTED] has completed a wooden mock-up of the instrument and requested that we visit the plant as soon as possible to review it. A visit is scheduled for 14 - 15 September 1965. Both PAG and IAD will be invited to attend this meeting.					
2. [REDACTED] anticipates a problem relative to the height of the viewing surface. As the design now stands, it appears that this surface is too high in the horizontal position, however when tilted it is satisfactory. This matter will be investigated during the visit.					
3. [REDACTED] has discovered what he thinks is the answer to the flat face problem. [REDACTED] has worked extensively in glass bonding and has a material (Poly-Vinyl Butal) which has the same index of refraction as glass which could be bonded to the tube. [REDACTED] is presently investigating this subject. All materials tried to date shrink from the glass bulb during bonding and an oil layer must be applied between the two.					
CLERK TAKING CALL		TIME	SEARCHED BY	TIME	ANSWERED BY
[REDACTED]		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
DATE		[REDACTED]			
7 September 1965		[REDACTED]			

DA FORM 751 1 FEB 58

REPLACES EDITION OF 1 OCT 51 **CONFIDENTIAL**

U. S. GOVERNMENT PRINTING OFFICE: 1956 O - 357675

GROUP 1
Excluded from automatic
downgrading and
declassification

25X1

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25X1

4. [] stated that [] has reviewed the [] study and thinks that their feedback mechanism should be used, however he expressed doubt for the first viewer because the tube (with a P-4 phosphor) has been received. This matter will be discussed more thoroughly during the visit.

25X1

25X1

5. [] has re-designed the physical layout of the instrument and has accommodated front loading of the film.

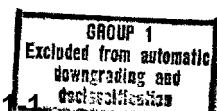
25X1

6. [] has yet made a decision as to the modification of a zoom to (addition of chip-on mono-mode).

7. Although the film transport mechanism and electrical design have been completed, [] expects a delay of delivery of several weeks due to the above mentioned unsolved problems. A detailed report explaining these delays is being prepared.

25X1

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1. Microscope

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a. [] says that

microscope could not be used
in the modulated mode. []

25X1

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[] says field is too small.

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[] $1 \frac{3}{16}$ " at 7X.

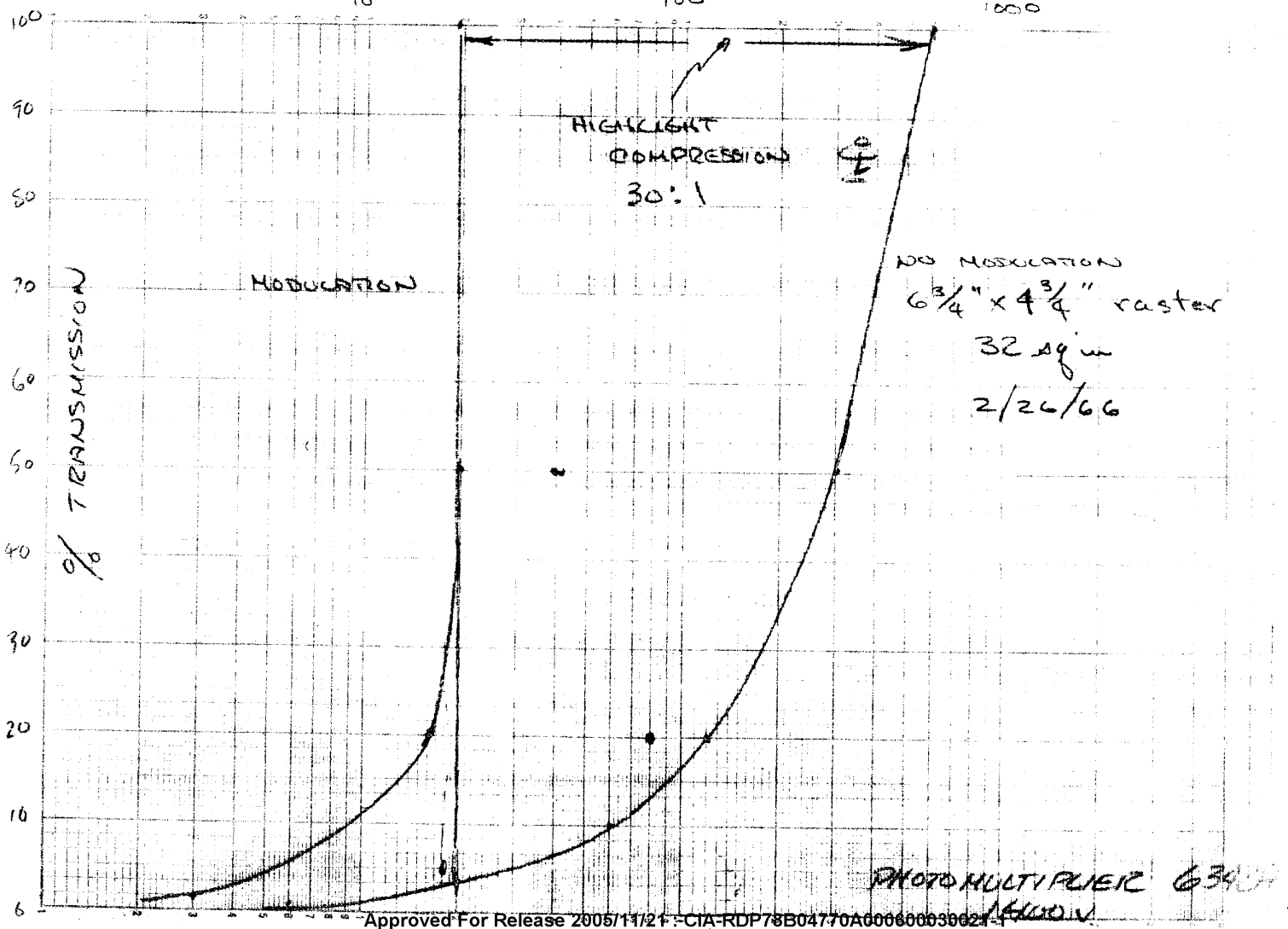
Meeting 7/7/65 confirmed
microscope feedback.

2. Pick-up for direct viewing
w/o microscope.

a. light pipe - S/N

b. G/Y type - phosphor

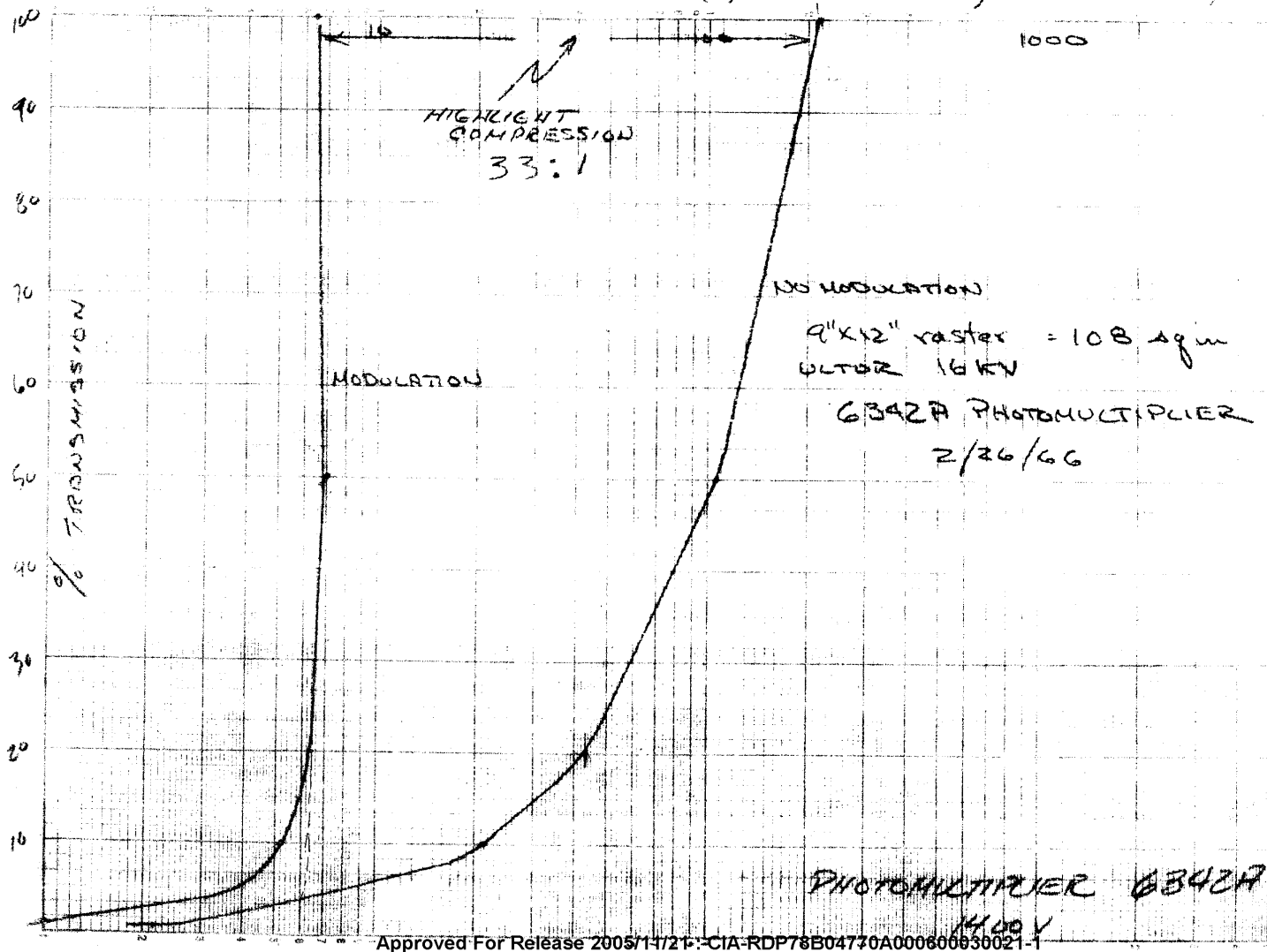
c. Present P-4
G/Y



INTENSITY (ft-lamberts)

748215

[Signature]



Modulated Light Viewer

Capability with Current Kinescope

- 16 KV Operation, Attenuating Glass
- 160-180 Ft-lam. (measured)
- 19:1 Compression (measured)
- 30:1 Compression (anticipated
with new Photo-Mult)
- Schedule
 - Proto 1 ~ March 15
 - Proto 2 ~ April 8

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Kinescope Modification #1

- Same Attenuating Glass
- Increase Phosphor, Aluminum Thickness
- Anticipated Capability

22.5 KV operation

250-300 Ft-lam.

~30:1 Compression

Kine Mod #1 (Cont.)

• Schedule

If tubes ordered immediately

Proto 1 ~ March 30

Proto 2 ~ April 22

• Cost Increment

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Kinescope Modification #2

- Clear Glass (if available)
- Increase Phosphor, Aluminum Thickness
- Anticipated Capability
 - 22.5 KV operation
 - 450-600 Ft-lam.
 - >30:1 Compression

Kine Mod #2 (cont.)

. Schedule

glass availability uncertain

Tubes available 30-45 days after glass

Best Estimate

Proto 1 3 weeks after tubes

Proto 2 5 weeks after tubes

. Cost Increment

EPT Program

• Current Status

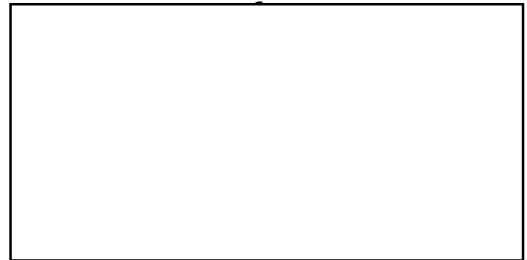
- Contact Printer Debugging
(Est. Complete 3/1 - 3/8)
- Scene Qualification, Preparation
Programming
(Ready for printer - March 15)
- High Resolution Processor Development
- Technique Analysis
- Interim Report Preparation

EPT Program (cont)

Expenditures

2/20/66

- AFC (contract budget)



25X1

Resolution Required

Rear Projection Viewer*

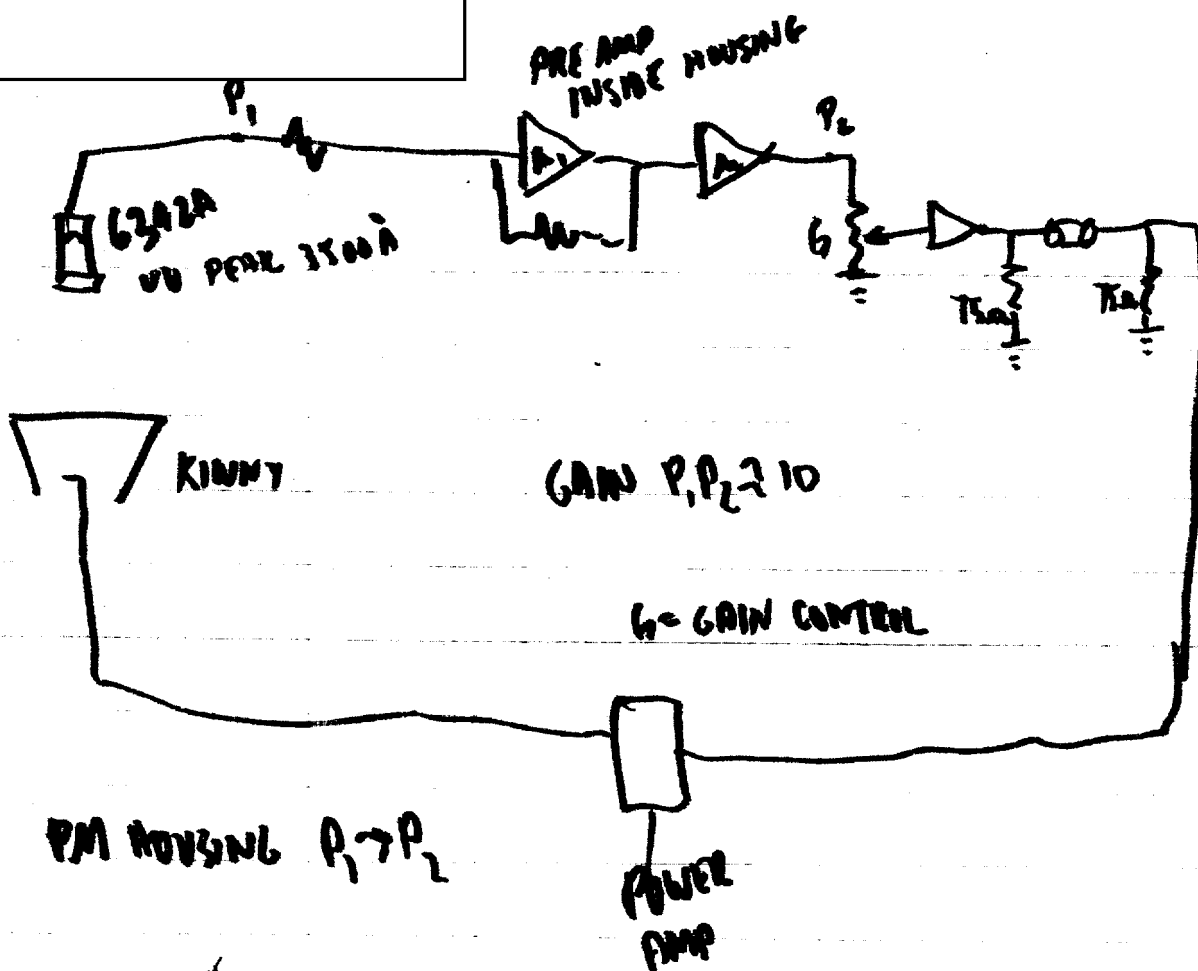
- PI Consultants *

Purchases

Spatial Frequency Analyzer

* Assumed Deleted

16 MARCH 1966



931A = PM

PA PHOSPHOR YELLOW 60 μ sec LOBE SPECTRAL OUTPUT
BLUE 20 μ sec ✓

BELOW ~~25~~ 3500 Å SPEED OF PHOSP. $\approx$ 2 μ sec.
FEED BACK

T=20%

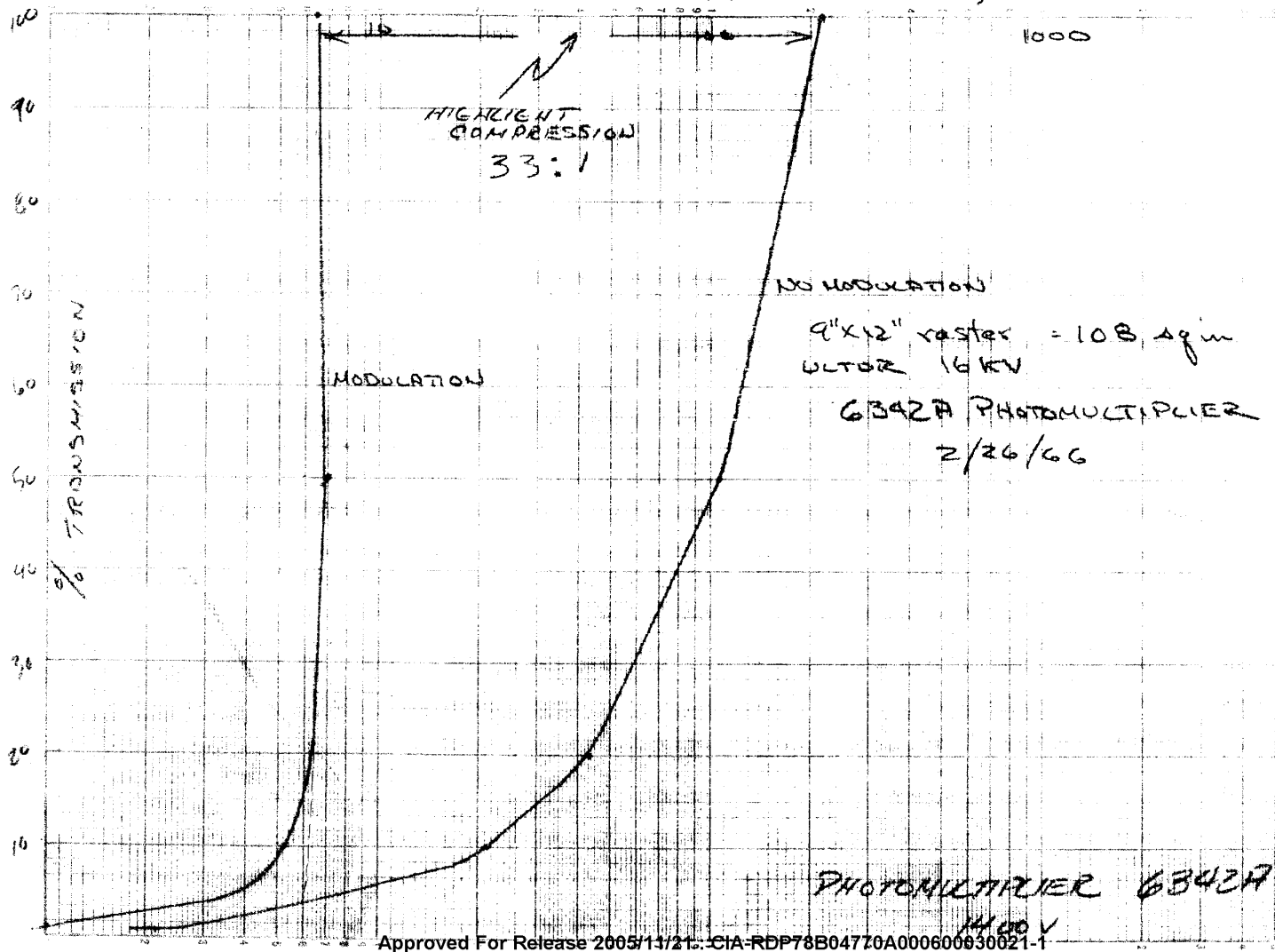
D=1

T=10%

D=2

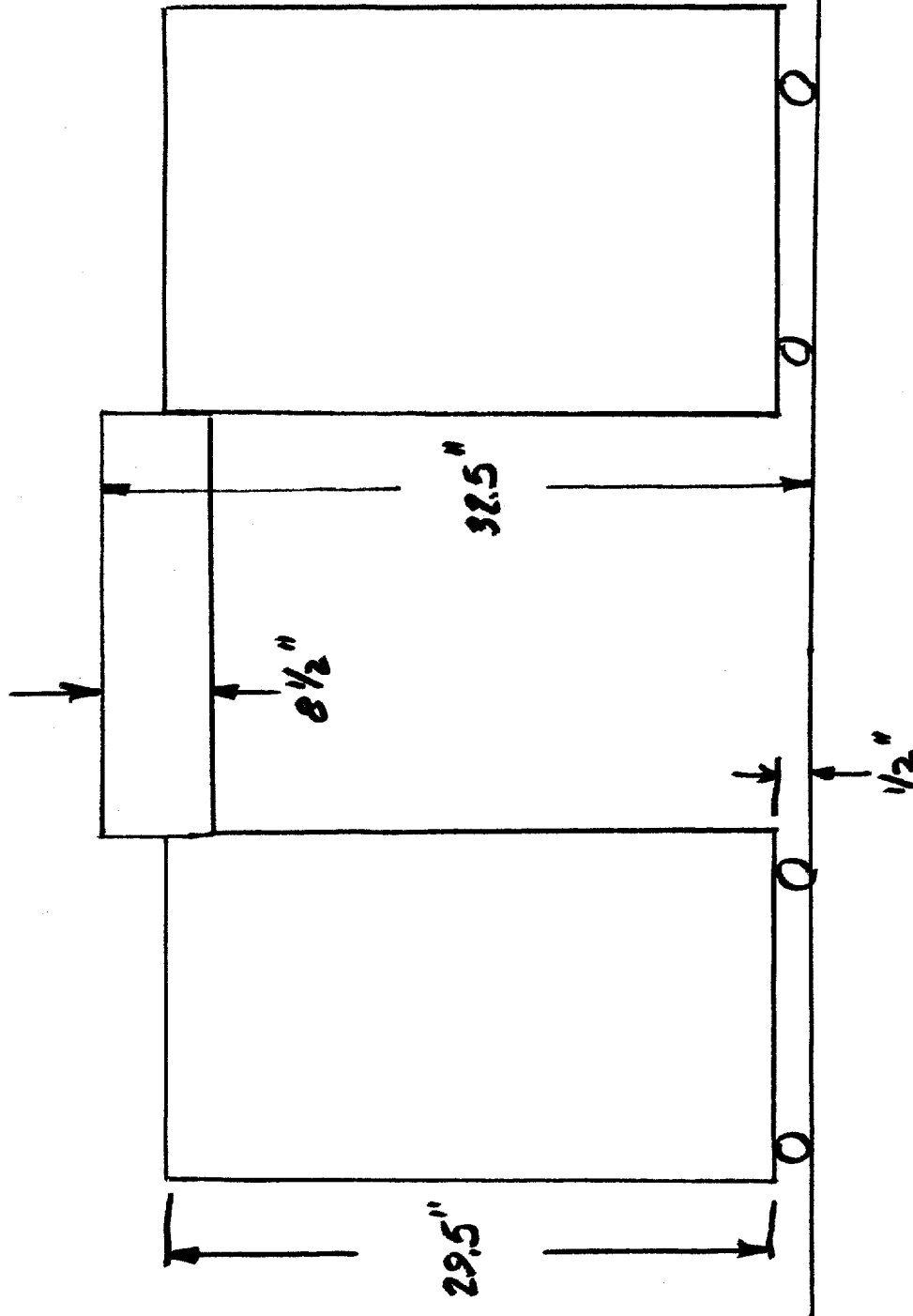
T= ~~20~~ 1%

INTENSITY (ft-lamberts)

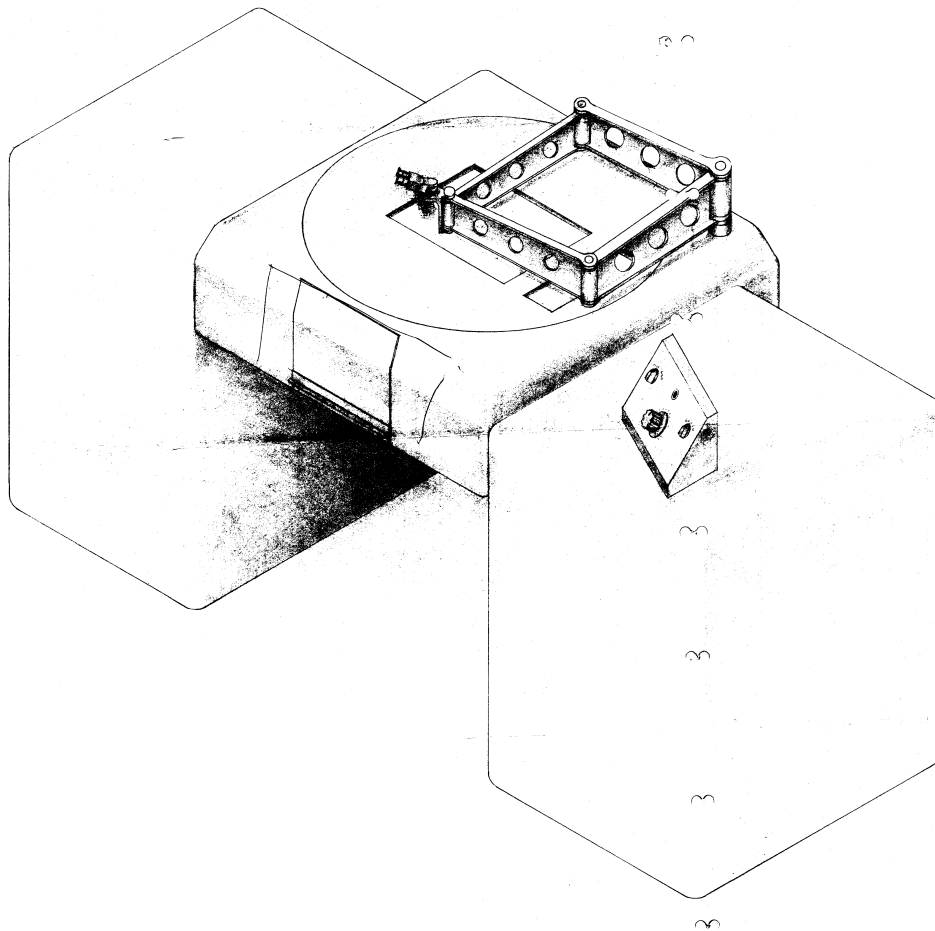


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18 NOV 65
FER

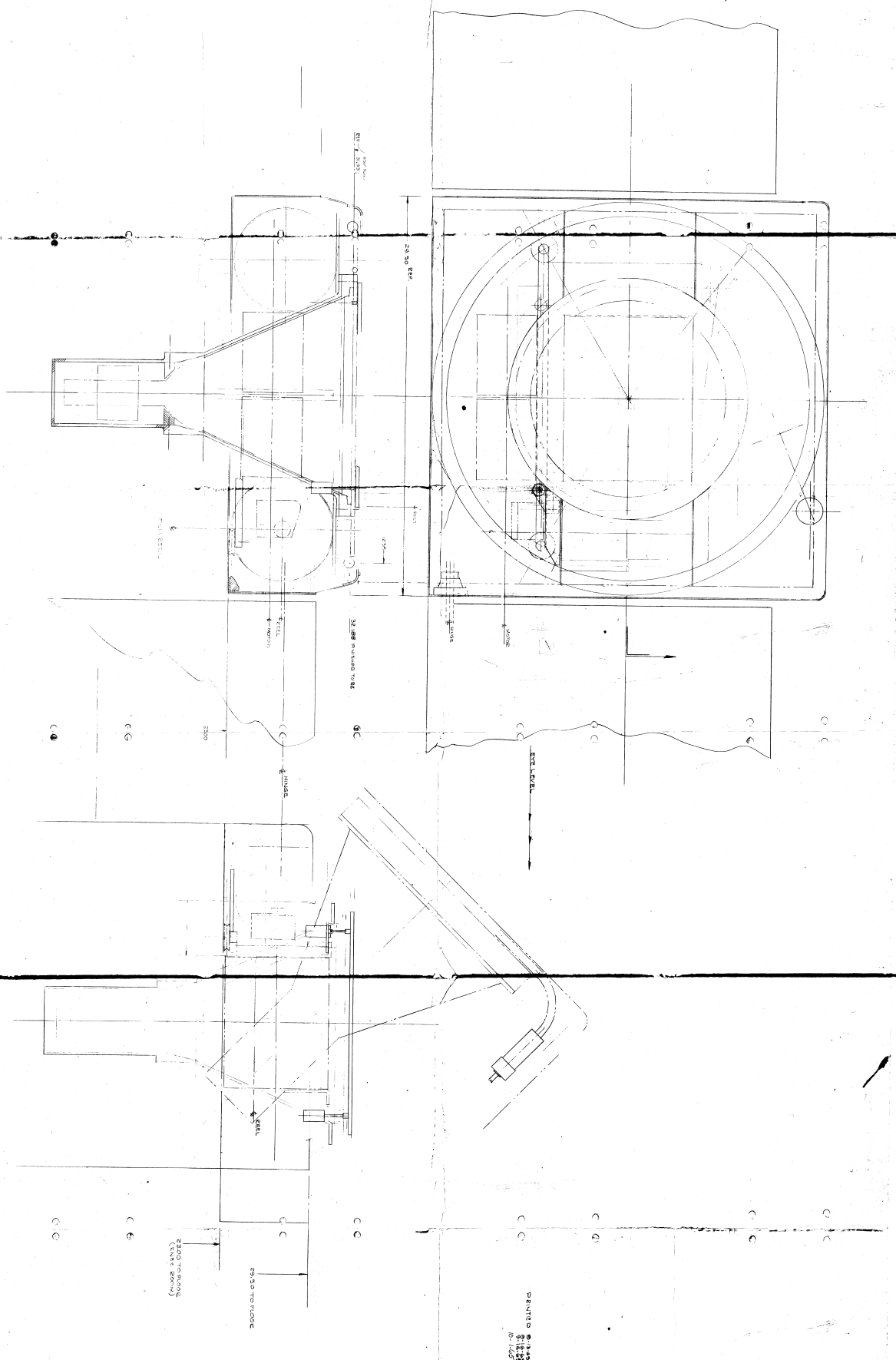
BASIC DIMENSIONS ON M.L.V.



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NO-1-65

REEL

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4114 D5106

PRINTED - 9-465
10-1-65

104P
MOTOR

REEL

MOTOR

(REEL)
4.094

9.550

9.210

100 300 10
500 1000 15
2000 2500 3000

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Specifications to be met in the design and fabrication of a modulated light viewer in addition to those listed in attachment A of letter dated 1 March 1966.

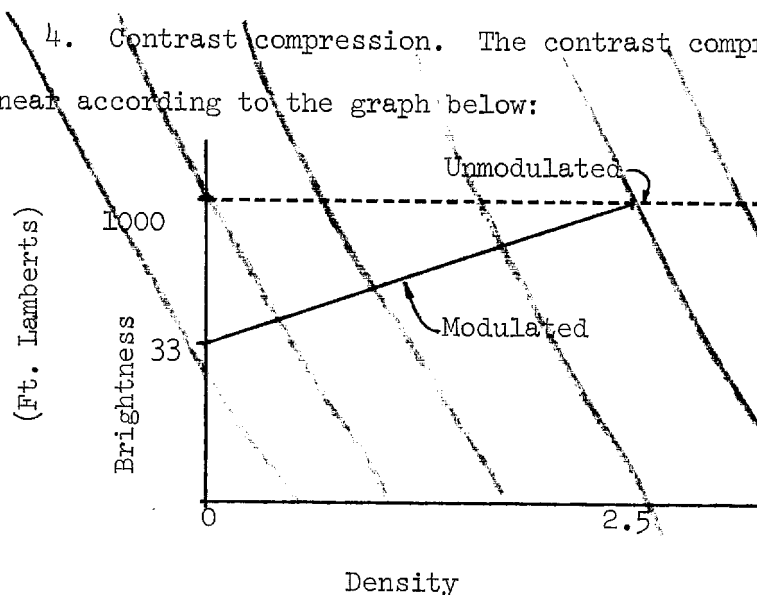
25X1

1. Flicker. There will be no visible flicker of the light source. This requirement also applies to the microscopic mode at any magnification or any raster size.

2. Tube Life. The brightness of the kinescope will be within 90% of the specified values for at least 500 operational hours after acceptance.

3. Brightness. The brightness values specified in attachment A will be completely uniform over the respective areas.

4. Contrast compression. The contrast compression will be linear according to the graph below:



5. The reduced raster will follow the translation of the microscope regardless of the angle of tilt of the table.

6. Film Transport. The film transport system will not in way damage the imagery.

7. Microscope Focus. Once focused at 30X, the microscope will remain in focus when translated to any portion of the 9 by 12 inch illuminated area.

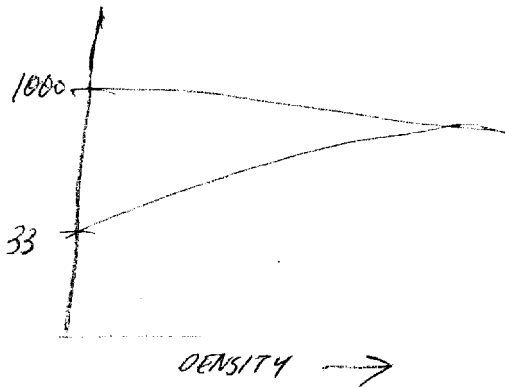
TELEPHONE OF 14 JUN 66

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25X1



1000 FT LAM. 9X9 AREA



500 FT LAMB MAX IN UNMODULATED (FOR 12 HR OPER.)

ALL AGREED TO 30:1 CONTRAST
REDUCTION AT MIN DENSITY
END

30:1 ON BREIDBOARD

$$\frac{B_{MAX}}{B_{MIN} \text{ NO MOD}}$$
$$\frac{B_{MAX}}{B_{MIN} \text{ MOD}}$$

FROM 0 → 2.0 DENSITY RANGE

~~2.0~~

(VIOLET) UV FILTER IN OPTICAL



INTENSITY (ft-lamberts)

